THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF WATER
Wastewater Discharge Authorization Program

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April 2, 2015

DEC File #: 2339.48.027
DEC Permit #: AKG315200

Re: Workshop - Oil and Gas Development and Production in State Waters of Cook Inlet

Dear Workshop Participants:

Thank you for participating in the Alaska Department of Environmental Conservation (DEC) workshops in Homer and Anchorage in May 2014. DEC provided these workshops to encourage early discussions on the development and reissuance of the Alaska Pollutant Discharge Elimination System (APDES) General Permit AKG315200 - Oil and Gas Development and Production in State Waters of Cook Inlet (Cook Inlet Development and Production General Permit). The morning portion of the workshop consisted of four presentations regarding the APDES permitting process and specific topics related to comments received. The afternoon portion of the workshop included three discussion topics for brainstorming.

The attached summary includes a brief description of the morning topics and details on the interactive afternoon session that focused on participant input. Accordingly, DEC made an effort to not edit or filter the comments received, but rather to provide minimal edits for readability while sharing the information with the participants as it was discussed during the workshops. The majority of the content is input provided by participants, and DEC or EPA responses are noted as such. Please take the time to review the comments and contact the Department if any are inaccurate. DEC attempted to capture the comments transparently with as little editing as possible.

During the upcoming year, the Department will focus on soliciting additional input to inform the development of the Cook Inlet Development and Production General Permit. The next steps for permit development include continued review of existing studies and those additional studies that were recommended for review during the workshops. If you are aware of relevant information or additional studies that the Department should consider during the permit development process, you may informally submit them at any time. We anticipate the permit being posted for Public Notice in fall of 2015 and will provide you a postcard and periodic updates on the progress of the development of this permit. Department

staff is also available for phone conversations, email exchange or in-person meetings, as requested.

DEC, we had planned to send this summary out sooner and we appreciate your patience. DEC recently issued the general permit for mobile oil and gas exploration in Cook Inlet and this effort took considerable resources. With this valuable experience, we look forward to picking up the discussion where we left off at the workshops last May.

Should you have any questions regarding this letter, please do not hesitate to contact me. I can be reached via e-mail at Gerry.Brown@alaska.gov and by phone at (907) 269-4874. If you have technical questions regarding the Cook Inlet Production General Permit, please contact Natalie Wagner via e-mail at Natalie.Wagner@alaska.gov or by phone at (907) 269-7956.

Sincerely,

Gerry R Brown

Gerry R. Brown, PE, Manager
Oil and Gas Section

Attachments: Workshop Summary and Workshop Evaluations
Working list of Studies to Review

Department of Environmental Conservation

APDES General Permit AKG315200

Oil and Gas Development and Production in State Waters of Cook Inlet

Workshop Summary

May 27, 2014 Anchorage

May 29, 2014 Homer

April 2, 2015

Table of Contents

1. Overview

The Alaska Department of Environmental Conservation (DEC or the Department) held interactive workshops in Homer and Anchorage in May 2014 to encourage early discussions on the development and reissuance of Alaska Pollutant Discharge Elimination System (APDES) General Permit AKG315200 - Oil and Gas Development and Production in State Waters of Cook Inlet (Cook Inlet General Permit).

DEC invited key stakeholder groups to contribute information, raise concerns, discuss current and foreseeable impacts, and provide suggestions for consideration during permit development. Interactive discussions were hand recorded during the workshop. Following the workshop, questionnaires were collected. The information provided will be used to improve future workshops, and support the development of a draft permit. The draft permit will be made available for public review and comment.

Key stakeholder groups included tribal governments, non-profit organizations, agencies, communities, commercial fisheries, industry, and individuals who commented on previous permits. Approximately 100 representatives/organizations from these groups were invited to the workshop. DEC received responses from 81 percent (%) of the individuals invited; 60 individuals planned to participate (40 in Anchorage, 20 in Homer). Actual participation was approximately 24% of the original invitees and 41% of the individuals who planned to attend.

During the morning portion, DEC provided updated information about regulatory frameworks and standard procedures that direct permit development. The afternoon portion of the workshop included three discussion topics for brainstorming. The discussions are recorded below. Based on main concerns identified in previous iterations of the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Cook Inlet General Permits, the following three focus topics were introduced for interactive discussion:

- Mixing zones in relation to water quality objectives and legal structure
- Implementation in phases - incremental improvements in reducing discharges
- From your understanding of local conditions in the proposed permit area, what are the key factors that need to be considered?

A third-party consultant hired by DEC moderated interactive discussions with stakeholders.

Workshop questionnaires were distributed to collect feedback on the quality of the workshop in the following three areas: general, presentation/content, and the break-out sessions. Criteria for each area were graded on a scale of 1-5 (1=Poor and 5=Excellent). Written responses to questions are categorized and attached with a tally of all scores. Overall questionnaire feedback was positive with an average score of 4.23 out of 5. Specific topics and workshop locations are summarized below:

	Anchorage	**Homer**	**Overall**
General	4.26	4.42	4.34
Presentation/Content	4.17	3.95	4.06
Break-out Sessions	4.42	4.17	4.30

DEC made an effort to not edit or filter the comments received, but rather to share the information with the participants as it was discussed during the workshops. Minimal editing was completed to aide in readability.

2. Welcome and Introductions

Opening remarks and introduction (Andrew Sayers-Fay, Deputy Director, Division of Water, Alaska Department of Environmental Conservation (DEC)):

> *DEC is holding these meeting outside of the traditional public comment process to educate stakeholders about the permitting process, regulatory limitations or authority, and to generate initial comments, concerns, and solutions regarding the Cook Inlet Development and Production General Permit.*

Introduction along with a review of ground rules, overview of agenda, and introductions around the room (Jon Isaacs and Taylor Brelsford, URS).

3. Presentations

The morning portion of the workshop included four (4) presentations covering the history and structure of the Alaska Pollutant Discharge Elimination System (APDES) Program as well as specifics regarding the proposed permit. Copies of the presentations were included in binders and handed out to workshop participants. The following sections summarize comments received; DEC strived to uphold the original content of the comment as much as possible.

3.1. APDES Program History and Public Involvement

Questions and Discussion (Wade Strickland, APDES Program Manager, DEC)*:*

A. **Question** about the process in reference to slide #8 describing the permitting process:

A.1. Specifically, where are we on the flowchart? How much time do stakeholders have to gather information? What is DEC's anticipated date of the draft permit issuance? ***DEC responded*** *by explaining what phase of the process the permit is in, mentioned the sending out of the Early Notification Letter. Provided a brief timeline: for this permit there will be a 90-day public comment period to accommodate the high level of public interest. Based on current practices, The comment period is scheduled to begin late in 2014, or early 2015. Public comment period will end in March/April of 2015. DEC is anticipating a large volume of public comments. Proposed issuance of permit would be early summer 2015. Caveat is that any complex process is subject to schedule change.*

A.2. The box that says "Reply to Notification with Information to be considered in Draft Permit": clarification on putting out the notice. Who does that notice go out to, the public or just tribes and local governments? ***DEC responded*** *that the 90-day notice will go out to the public. They clarified that this workshop is an early step in the process, it is in addition to the required public outreach effort, and just involves stakeholders.*

A.3. Further questions were asked about how DEC will advertise the issuance of the draft permit. ***DEC responded*** *that the announcement will be posted on websites, including the commissioners public notice webpage, advertised in local newspapers, and a notice will be sent to tribes and local governments.*

B. **Clarification** requested about the 90 day period: Does that occur before or after the issuance of the permit? ***DEC responded*** *that after the 10-day applicant review, DEC will adjust the permit, then, there will be the 90-day public notice of the draft—not final—permit****.***

B.1. Confusion over if the comment period is for the general permit or for individual applications for coverage under the GP. ***DEC responded*** *that it is for the general permit; coverage for individual facilities begins after the 30-day appeal period ends. Individual applications (notice of intent) and authorizations are not currently required to be posted for public review.*

C. **Comment:** There are instances where individual facility permit stipulations do not go out to public notice, and they should be reviewed by stakeholders (especially study plans and monitoring plans). ***DEC responded*** *that all stipulations must meet the conditions and needs specified in the general permit. DEC is required to put a permit back out for public review if significant changes are made that are not based on comments received. The study plans required by the permit are part of the NOI process and not currently required to be reviewed by the public.*

D. **Question** in reference to slide #15: What is the process for individual permits? ***DEC responded*** *that the 10-day preliminary draft review period was adopted for both the general and individual permits. The goal is that by the time the permit goes out to public notice it does not need significant revision, so it is very valuable for applicants and agencies to provide input during the 10-day period.*

E. **Question:** Was this permit overseen by EPA or is this an EPA permit that transferred to DEC in 2012? ***DEC responded*** *that the permit expired in 2012. The way the Memorandum of Understanding (MOU) was written, all of the NPDES permits that were active at the time of the transition became APDES permits. Up until Phase IV, the EPA had jurisdiction, then, DEC took over. Since the permit expired in 2012, the existing authorizations were extended and no new authorizations have been issued.*

F. **Question:** Since the NPDES program authority transferred to DEC, is the previous Cook Inlet general permit still under EPA authority, or is it transferring to DEC? ***DEC responded*** *that the EPA issued the permit in 2007, and when the program transferred in 2012, DEC assumed authority for the permit.*

G. **Question:** Is it common for a permit to be expired before beginning the 2-year re-permitting process? ***DEC responded*** *that the goal is to increase the issuance rate so there are no gaps. The goal is to issue the permit as quickly as possible, but it takes time to develop complicated general permits. The permits will be effective for 5 years, so DEC will begin the reissuance process in year 3.*

H. **Question**: From a planning perspective, the permit would be good for 5 years, but work on the next permit probably starts before the expiration. Regarding fish consumption, is DEC going to factor tribal concerns and review opportunities into the planning for future permit renewal? ***DEC responded*** *that the existing regulations are what presently guide the development of the APDES permit. The Department recognizes that fish consumption is an important issue, and the Water Quality program's final action on fish consumption will take a number of years. DEC will consider lessons learned, relevant information, and perform an analysis related to fish consumption. The APDES program interfaces with the water quality program on fish consumption, and the related guidelines are part of the review when considering permit reissuance.*

I. **Question:** Does DEC have enough funding to ensure it has enough compliance officers once the permit is issued? ***DEC responded*** *that before taking over the program, a resource analysis was done to determine whether or not it has enough resources. DEC believes it has sufficient resources to ensure compliance.*

J. **Clarification** on the 301(h) waiver program, and how communities first received waivers. ***DEC responded*** *that in the 1970s communities could apply for a waiver from certain standards requiring secondary treatment of municipal wastewater if they could meet certain criteria. After that time frame, no other facilities could apply for that waiver. For each reissuance of the Section 301(h) waivers, the EPA reviews whether the facility still meets the criteria for the waiver. Stakeholders expressed curiosity about the Matanuska-Susitna Borough trucking material to the Anchorage*

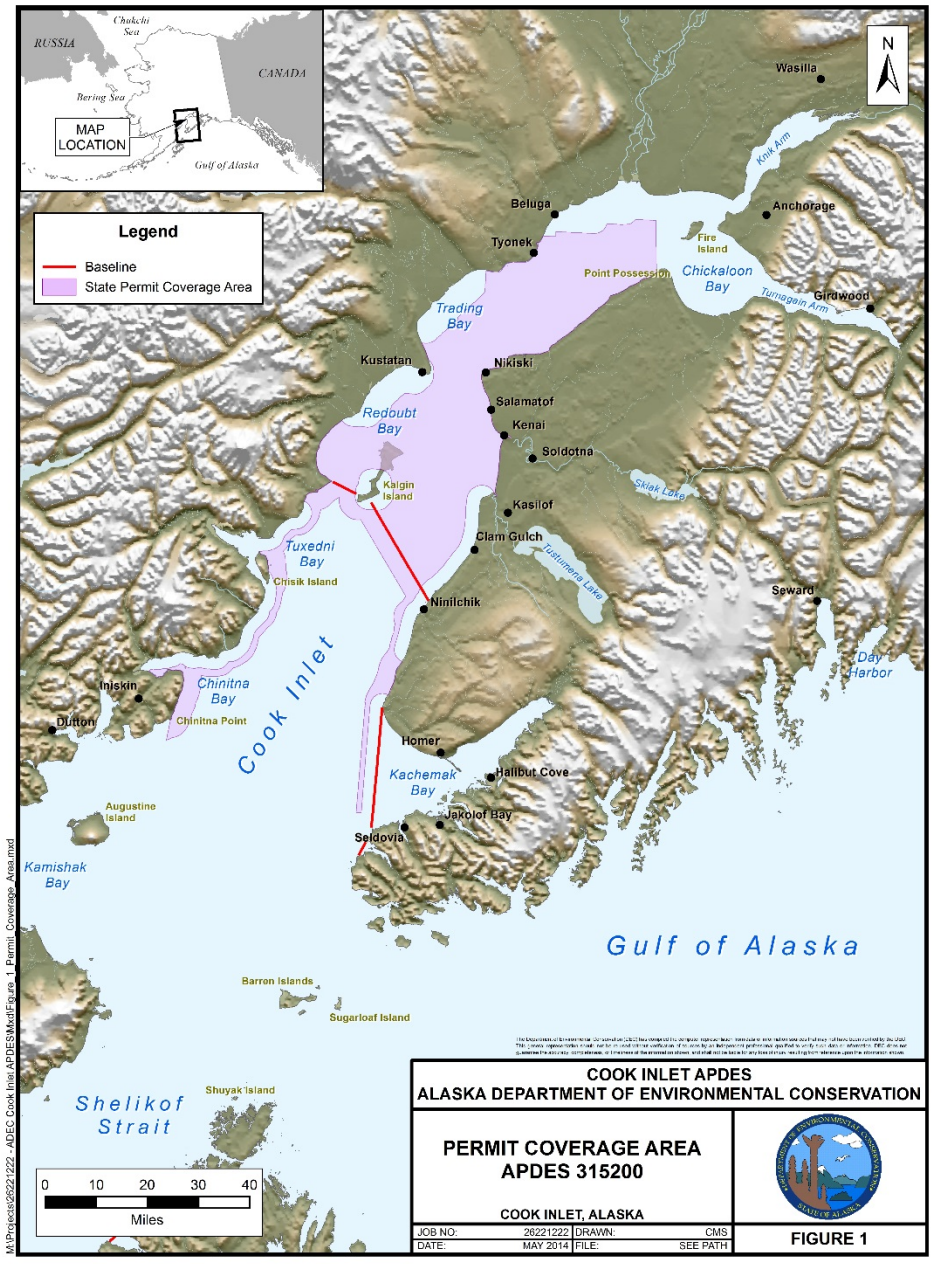
Municipality facilities, which discharge into Cook Inlet in relation to the 301 (h) waiver. DEC responded that as long as any facility has the waiver, EPA has authority to determine if it still meets the criteria for that waiver. If EPA determines it does not meet the criteria, DEC would then assume permitting authority.

K. **Question:** What does fish consumption mean, exactly**?** ***DEC Response:*** *In short, it is when and how much humans eat fish. [The larger context of this discussion derives from concerns about contaminants in fish, and the fact that subsistence fish consumption rates are greater than average rates in other areas.]*

3.2. Permit Types, Technology-based Effluent Limitations and Effluent Limitations Guidelines

Questions and Discussion (Cindi Godsey, US Environmental Protection Agency)*:*

A. **Question** regarding verification of the map: Can you verify that the red line goes north from Seldovia? Is that also part of the baseline? (Question refers to Kachemak Bay). ***EPA responded*** *that there are more baselines than what are shown on the map. Kachemak Bay will not be covered in this permit (oil and gas exploration activities will not be permitted to take place within Kachemak Bay).*



B. **Question:** Will there be concurrent issuance of a Federal permit for exploration, development and production to cover the federal waters? ***EPA responded*** *that there is no permit for production in*

Federal waters, and presently there are no applications for exploration in Federal waters, so there is currently no need to develop a general permit for development and production for federal waters.

C. **Clarification** on slide #11 regarding shoreside facilities, and the 3-mile limit: What are the differences between onshore and offshore facilities, and what regulations apply where? ***EPA responded*** *that offshore guidelines apply beyond 3 miles from the coast. The offshore guidelines have an exception for Alaska-based facilities in state territorial waters for water-based drilling fluids and drill cuttings, and well treatment, workover, and completion fluids. The coastal guidelines have an exception for Cook Inlet for produced water in addition to those listed previously for Alaska Territorial Seas.*

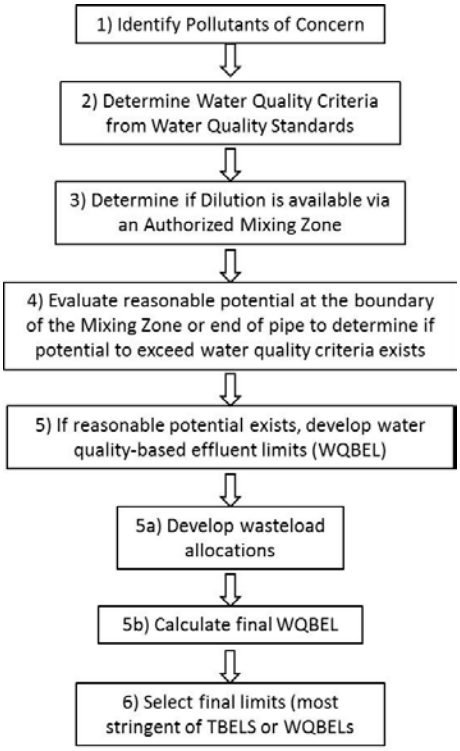
D. **Question:** Does the EPA still regulate the vessel discharge permits? ***EPA responded*** *that yes, it still regulates vessel discharge permits. Vessels are not stationary, so discharges can be interstate or inter-regional, so having each state issue that permit would be challenging. However, states can put in their own conditions.*

E. **Question:** Who is going to regulate in Cook Inlet regarding the Vessel General Permit (VGP)? ***EPA responded*** *that it would primarily have authority over vessels, but the DEC could regulate vessels under the permit if it was thought to be necessary. DEC has its own cruise ship vessel permits; for that type of vessel in Alaska, DEC would be a more appropriate regulator.*

3.3. Water Quality Standards and the APDES Permitting Process

Questions and Discussion (Gerry Brown, APDES Program, Oil and Gas Section Manager, DEC):

A flowchart was presented by DEC during the meeting to supplement the materials in the binders and the presentation:



A. **Question:** Does this upcoming general permit pertain to the existing platforms in upper Cook Inlet that are going to re-drill to a deeper depth? ***DEC responded*** *that it would require an exploration permit if the resource has not already been delineated.*

   A.1. Further questions if it would apply to this permit if the platform employed new technologies or new chemicals for the additional drilling? ***DEC responded*** *that it is unlikely that new techniques would be used at this point. But if they do propose to use new technologies or new chemicals to discharge, that would also be reviewed by DEC during development of the permit.*

B. **Clarification:** Whether or not DEC authorizes a mixing zone, DEC relies on the information provided by the permittee. In what format is that information provided, and how does the permittee give it to DEC/EPA? ***DEC responded*** *that it is provided in reports as part of the mixing zone application. The State also has a form 2M (part of the mixing zone application) which includes some of the raw data, so DEC can plug it into its own models to verify the consistency of reports.*

C. **Question:** Is there a standard protocol for sampling for compliance in Cook Inlet? For example, are there certain tidal conditions in which sampling must occur? ***DEC responded*** *that for compliance, sampling is always done at the end of the pipe. DEC requires a plan of action from the applicant, to make sure they are getting representative data.*

D. **Question:** How are mixing zones in Cook Inlet delineated? Using maximum tides and currents? ***DEC responded*** *that in Cook Inlet, the mixing zones are long and narrow. The mixing zones are modeled on a case-by-case basis, but In general, the 90th percentile current will determine the length, and the 10th percentile current will determine the width.*

E. **Question:** Regarding slide #13: Are the mixing zone calculations based on a particular flow rate of the water? Conditions vary from site to site. It seems like the size of the mixing zone will depend a lot on the flow rate of the water. What is your baseline for determining the flow rate? ***DEC responds*** *that it depends on the situation. DEC knows that a one-size-fits –all permit doesn't always work. For this reason, site-specific mixing zones are built into the* existing *General Permit. DEC will re-evaluate mixing zones during permit development for the next reissuance.*

F. **Clarification:** even though it is general process, are there some case-by-case authorizations? ***DEC responded*** *that site-specific details are generally incorporated upfront (in reference to site-specific mixing zones) so that the general permit conditions apply to all authorizations as opposed to being provided in the authorizations under existing permit.*

G. **Question:** Can you please explain the process through which mixing zones are established? Is it based on what size it needs to be? It seems like the mixing zone can be any size? There appears to be a conflict with the idea of changing increments over time. How do you limit the size of mixing zones? ***DEC responded*** *that when defining a mixing zone, they take into account the geographic area the driving parameter, treatment, and expect the permittee to do better over time. For individual mixing zones, DEC looks at the concentrations of pollutants and discharge rates and current speeds, and then models the worst case scenario. The mixing zone is not just a demonstration of size, but is a demonstration of the mixing, the receiving water, tidal velocities etc.*

H. **Comment:** By modeling the worst-case scenario, it seems like the mixing zones are as big as possible, so there is no pressure to minimize discharge incrementally. It is an odd statement to say DEC uses the worst case scenario to determine the size of the mixing zone; this makes the zone as big as possible; how does this protect the water quality? ***URS facilitator mentioned*** *that the topic of mixing zones would be a good topic for discussion during the afternoon session.* ***DEC responded*** *that the need to ensure that the water quality criteria are met at the boundary of the mixing zone is in the regulations, so that is the #1 priority. We need to make sure that we meet our criteria at the*

boundary of the mixing zone. There are a multitude of factors that are considered to ensure the mixing zone is as small as practicable. Some of these factors ensure protection for aquatic life, human health, and the use of the waterbody. If these factors are met, then the mixing zone is appropriately sized.

I. **Question**: Why is there a minimum concentration level of chlorine? ***DEC responded*** *that chlorine ensures that the enterococci and fecal coliform are controlled before the water is released. Some facilities use a marine sanitary device (MSD) to manage human waste. Chlorine dosing is an important treatment process for MSD's.*

J. **Question:** Wouldn't there be a lot of wastewater that doesn't have human waste? Why is there a minimum concentrated level of chlorine for that? ***DEC responded*** *that the minimum total residual chlorine regulation only applies to human waste discharge.*

K. **Question:** Why is there a focus on the concentrations of mercury (Hg) and cadmium (Cd) in barite? Hg and Cd are historically associated with barite from Canadian barite mines, and industry stays away from that barite. ***DEC responded*** *that sampling of those metals was used during ELG development, with some historic perspective. In addition, monitoring Cd and Hg may be useful as a surrogate for other metals. Hg and Cd are measured in baseline sampling to determine background concentrations.*

L. **Audience Observation**: Cadmium is found in the North Slope. Selecting it as a tracer might give DEC inappropriate results. Do the permit requirements about Hg and Cd apply to the mud before it is discharged to the water? ***EPA replied*** *that the requirements apply to the mud before it is discharged to the water.* ***DEC responded*** *that it is not uncommon to require sampling for all the other metals too.*

M. **Question:** Are those monitoring requirements in the Environmental Monitoring Plan (EMP)? ***DEC responded,*** *that is one of the places. There are sometimes other places as well.*

N. **Question:** Copper is relatively high, naturally, in Cook Inlet. What is the process for insuring additional copper is not added? This affects salmon behavior. ***DEC responded*** *that they consider copper as a parameter of concern. DEC understands that the criteria for copper are very stringent, and high on their list for evaluating during permit development.*

O. **Comment:** Cook Inlet is not a strong depositional environment… the water gets flushed out quite readily, unlike Puget Sound or Chesapeake Bay, but the contaminants are still there; they are sorbed to the sediment but they are still in the water column. How do you design a water quality study that works for Cook Inlet? This is something that we looked at in 2007 but the question is still outstanding. DEC needs to address the problem of deposition, so needs to develop a sampling program to take that into account. DEC should decide how to design a water quality monitoring study to take that into account.

P. **Question:** Is there any way to address the issue of cumulative impacts during this workshop? ***DEC responded*** *that that topic will be discussed in the afternoon session.*

3.4. Technical and Traditional Knowledge Summary

Questions and Discussion (Natalie Wagner, APDES Program, Oil and Gas Section, DEC)*:*

A. **Question:** There are gaps in some of the data. What is DEC doing to fill in the gaps; is research done in-house or does DEC reach out to other organizations? ***DEC responded*** *that one of the purposes of this workshop is to hear from different stakeholders about what could be improved in the permit. DEC wants to hear what stakeholders think the gaps are, and then DEC will coordinate with other*

agencies and organizations to acquire the data, or put conditions into permit for the permittee to collect that data.

B. **Question:** With regard to slide #5 (flow chart), does "Additional Monitoring and/or Special Studies" refer to having specific goals during permittee sampling? Are there goals that must be reached while trying to get Cook Inlet contamination to a certain level? ***DEC responded*** *that compliance is part of it; conditions may be included in the permit to have permitees gather additional data. Special requirements in the permit can be included to have the permittee collect data to fill data gaps.*

   B.1. **Follow up clarification**: There could be a mandate in this permit to gather data. It is not for compliance, it is for monitoring for future regulatory decisions. ***DEC responded*** *that if monitoring and reporting are in the permit conditions, then the permitees must comply with those conditions. It is not a 'numeric' compliance requirement, rather it is a 'reporting' compliance requirement. Non-compliance occurs if the permittee does not conduct the monitoring or special studies specified in the permit.*

C. **Question** regarding slide about Proposed Next Steps: Clarification on the 10-day review period. ***DEC responded*** *that this review period is for the applicant review.*

D. **Clarification** regarding slide #6: There are mistakes in the timeline, regarding main references. AKMAP was not Cook Inlet-specific, so in 2005 they set out to study Cook Inlet-specific data. ICIEMAP map came out in 2008. All ICIEMAP data was sent to agencies, including EPA, so it is likely available on an EPA website.

E. **Question:** How will DEC use the subsistence study from Seldovia when writing the permit? ***DEC responded*** *that there are many studies available; all relevant background information will be considered during permit development. Other agencies or Department programs will also address it if it is out of scope for DEC's area of permitting jurisdiction. Other states are developing fish consumption guidelines. DEC is working with these other states to determine lessons learned, and will use that information to move forward with recommendations to the Commissioner's Office. Fish consumption is one element of human health criteria, which the state is looking at updating. The permit falls into a category where the old rules don't address the concern, and the new rules are not yet written. It is too soon to predict the specific impacts of fish consumption guidelines on the permit.*

F. **Question** about human health criteria: The assumption is that the average contaminant concentration is based on the average person's consumption of seafood, but coastal peoples and others eat larger amounts of seafood. Will DEC come up with the average and then the permit writers will take that and apply it to the permit? ***DEC responds*** *that the average that was presented had more to do with the average pollutant concentrations in fish. To address different consumptions in different populations, DEC recognizes that the standard number appears low, and is considering revision. The criteria will be different for each pollutant. Human health effects are typically related to chronic human health problems, so the chronic human health criteria would apply. So how do you adapt this for populations that eat a great amount of fish tissue? DEC is looking at changing the human health criteria to take into account populations that consume high levels of fish. Whether this changes the water quality criteria depends on the pollutants that you look at. Some pollutants will accumulate and cause chronic health problems, whereas others will not.*

G. **Question:** Will DEC change the acceptable risk level when updating the fish consumption criteria? ***DEC response:*** *right now the acceptable risk level is 10^{-5} (0.00001) or one in one-hundred thousand. That is a factor that we will look at when updating the fish consumption guidelines, but we do not anticipate changing the acceptable risk levels. Although this is another factor that goes into human health criteria, there is a bigger issue—how to ensure protection of populations with high levels of consumption.*

H. **Clarification** on slide #15 regarding the history of engagement with tribes**. *DEC response:*** *EPA held the meetings with tribes in both 2013 and 2004, and prepared the reports. DEC thought the reports were interesting enough to share in this presentation. DEC did participate with EPA in the 2013 round of conversations. A smaller number of tribes participated in consultations in 2013, relative to the larger number of tribes that participated in 2004. However, the number of tribes that participate is only one of several metrics that should be considered.*

I. **Concerns** regarding trash on beaches from platforms or industry activities. Another participant stated that industry has tight control of waste from their platforms, and that they may want to consider that there are other sources of trash in the inlet. ***DEC response:*** *That comment was likely from people who were probably speaking toward the 1970's. Information on trash can be clarified through collaboration and sharing information. The State is learning about the inlet and flows and where things come from and go to.*

4. Afternoon Brainstorming Sessions

The afternoon portion of the workshop included three discussion topics for brainstorming. The discussions are recorded below. DEC made an effort to not edit or filter the comments received, but rather to share the information with the participants as it was discussed during the workshops. Minimal editing was completed to aide in readability.

4.1. Mixing zones in relation to water quality objectives and legal structure

Issues/Concerns and Solutions

- Calculating the shape of the mixing zone
    - DEC considers a mixing zone like a circle, but it is more like a bow-tie; long and skinny, with width gradually increasing. Depending on how you do the calculations, you will get different answers. In the past, calculations don't match what is happening. DEC can work to get better answers.
    - To clarify, shoreline plumes are stretched—long, thin, and oval, with some circular motion. Currents parallel to the mixing zone axis in Cook Inlet need to be taken into consideration.

    Participant Proposed Solution: You can calculate mixing zone sizes
- The majority of data is from the summer (spring-fall), and decisions are based on net flow of Cook Inlet. There is a lack of understanding between how much that current turns off in the winter.
- Size of the mixing zone
    - The size of a mixing zone is determined according to the concentration of the contaminant, and that is circular reasoning—if the pollutant loads go up, the mixing zones get larger. How does this protect water quality?
    - The degree of dilution determines the size of mixing zone. Standard models may not apply in all cases.
    - Regarding circular reasoning, and the size of mixing zones: Concern was expressed that when there is a large amount of contaminants being discharged, the mixing zone just gets bigger to accommodate that. Mixing zones are problematic because of the large amounts of pollution. For the long term, stakeholders would like to have more information on this topic and would like to see a way to ensure that the permitees are working on improving discharges and decreasing the size of mixing zones.

- DEC stated that there is no goal to make acute mixing zones smaller—why? ***DEC responded*** *that we consider both the chronic and the acute mixing zones. The acute mixing zone is the zone of initial dilution where acute criteria must be met. DEC is required to ensure that all water quality and human health criteria are met at the boundary of the chronic mixing zone*.

Participant Proposed Solution: The commenter would love to see DEC have detailed mixing models on a very, very fine scale. There are good numbers to enter into those models. It would be a physical oceanographic look right at the diffuser. Once and for all look at those sediment concentrations. It could be done if focused on the near field. Keep in mind you can get 2-3 orders of magnitude difference depending on the diffusion. Better off trying to figure out the hydrographics, then use one model to understand it.

- There is a lack of good year-round water column stratification data.
- Consistent effluent limitation standards
  - There seem to be multiple of considerations that go into effluent limitations, and considerations for particular applicants/permitees. There are not many industry standards—industries have to meet the water quality standards themselves, and use Best Management Practices (BMPs), but unsure of any other standards. Is this an understanding gap, or is that because there are not standards that apply for all operators? ***DEC response:*** *that the basis is in compliance with State water quality standards, and they are not industry standards.*
  - Are the BMPs guidelines or regulations? ***EPA response:*** *that they are water quality protection guidelines.*
  - The root of the concern is the consistency in applying guidelines across-the-board, in particular to industry effluent. When you compare the permit conditions in the different general permits, they are all very different; for example, the seafood General Permit has very different limitations relative to the oil and gas General Permit. It would be good to have some clarity about why the limitations are different for different permits. Basic concern: it is confusing to see one operator apply one set of requirements and standards while another operator is applying another set of requirements for the same practice.
  - One set of standards apply to existing production facilities, and another set apply to new production facilities. (Additional conversation included that the ability of older production facilities to retrofit for newer technology associated with reducing discharge may be limited. New facilities are better able to apply newer technology.)
  - There are differences between what is allowed for different industries in the General Permit. From the perspective of the permitees, they would like to see what the differences are. If you compare the general permits for different activities, often there are many differences between them.

Participant Proposed Solutions: Available studies/data

- There are many answers in previous data; for example, the effects on aquatic species: There have been many studies done on toxicity and aquatic species.
- However, many of those studies were done in the 1950s or 1960s, so there are still data gaps even though numerous studies have been done. There are some limited more recent data.
- There are some data available on other water bodies.

  - If they are looking to get numbers or answers, DEC should concentrate efforts to within 100 meters of the operation of interest. You will not see anything if you are looking kilometers away from the operation. The exception would be plumes.

- Effluent guidelines related to mixing zones: Related to the fact that discharges can lead to very large mixing zones, we would like to discuss the economic considerations, such as not being able to consider reinjection options, for example.
- Cumulative impacts: Concern was expressed regarding site specific impacts to aquatic species and how that applies to establishing mixing zones. With regard to cumulative impacts, the longer development is occurring, the more the cumulative impacts will be visible. So we don't know whether there are some studies of beluga or other long-lived species to help evaluate the cumulative impacts.

  Solutions: This had been addressed in multiple ways, one way is to look at it early on from previous studies. Investigators put significant effort into water and sediment quality. There was a large effort for 20-30 years to collect that kind of data to see what is accumulating in Cook Inlet or further downstream. Depositional areas of sediments were studied to look for increases in contaminants over time; there has been no apparent increase. There are studies for what is coming in from the watersheds around Cook Inlet, and studies looking at belugas and taking tissue samples; results indicate there are no, or low, levels of contaminants detected. A few individual results had high levels, which leads to additional types of samples that could be incorporated into future sampling (metabolization of contaminants). Try to look at early data, because you can't monitor every single trophic level. But there are some data available.
- Concern over the accuracy of models that are used to determine the size of mixing zones.
  - How accurate are the models used to calculate mixing zones? Depending on the parameters that are put into model, it will give you different numbers. How accurate are they, how good are they, and how are they being used?
  - DEC should recognize the gaps, even with the studies on currents that are out there. For example, there is a lack of good seasonal information. Need better information about oceanographic conditions and seasonal changes.
  - For example, freshwater inputs are seasonal and they drive the net outflow from Cook Inlet; how much does that turn off in the winter? Density-driven currents are driven by rivers flowing into Cook Inlet, but how much does that fresh water input decrease in the winter? Many the models are driven by what is known about conditions in the summer.

  Participant Proposed Solution: Better hydrographic information, including seasonal data, and collection of hydrographic information on currents (north/south with tides, far field with density-driven currents). Need to collect better data in the winter with a layer of ice on top of the inlet. Build on previous Produced Water studies.
- Will mixing zones be getting smaller? In 2004 when tribes met with the EPA about this permit, EPA was making the mixing zones larger and that seems like that is moving in the wrong direction.

  Solution: Look at technological solutions. Technology is always improving. Somebody is always working on technology to make it work better; need to look at what technology can be used to treat the water, or pump it to land so that we do not need the mixing zones at all. Can we incorporate new technology to decrease the size of mixing zones or do away with them altogether in the future?
- Curious about how many facilities under the current permit have mixing zone standards. It seems like if mixing zones are the exception, and all of the facilities covered under the General Permit need

mixing zones, then there are more exceptions than adherence to the permit. It seems like it defeats the purpose of a General Permit if there is a separate parallel permitting process for each individual facility covered under the GP. Seems like they are doing the permit twice. ***EPA response:*** *having a mixing zone is not considered an exception. If someone applies for a mixing zone and the conditions are suitable, then the applicant can get one.*

- Concern over lack of incentives to make mixing zones smaller. The mixing zones are made to be big enough to meet the standards at the boundary. Using worst case scenarios in the mixing zone models makes mixing zones even bigger than they need to be. Are there incentives to make them smaller? Plans and effort for that do not seem to be underway. A big mixing zone does not improve discharge at the end of the pipe, it just changes the location of the boundary where water quality standards are met. There should be discussion about improving dilution at the point of discharge.

  Solution: Create incentives for making mixing zones smaller. Apply additional technology before the end of the pipe.

- Reinjection options: Can they inject the produced waters and muds to limit or reduce discharges?
  - Some of the facilities do inject the waste downhole. There is some amount of re-injecting drilling byproducts. Could that be a way to mitigate the need for mixing zones? Is that being done to its full extent? There might be some substances that could be re-injected (like drilling muds and cuttings). ***DEC responded*** *that some individual permits have fewer or no discharges because they do re-inject. However, the ability to inject in Cook Inlet varies.*
  - A participant mentioned that it is not economic to re-inject from existing platforms. For industry, it is more economically feasible to bring byproduct to shore than it is to re-inject it. Some new platforms and are re-injecting and are not getting permits to discharge, and so now there is precedent for that. It is difficult for old platforms to retrofit to accommodate reinjection. However, geologic formations need to be revisited for adequacy for reinjection.
  - Economics ought not to be the dominant reason for a decision, the environment should dictate that, so reinjection should be used more. Reinjection has been shown to work, they are doing it at Osprey. The argument against it is economic, but it should not be economic.

  Participant Proposed Solution: Reinjection could be used more widely to minimize the volume of discharge.

- Most of the discussion has been on mixing zones off a single platform with a single pipe, and does not take into account many platforms in a row, regarding toxicity working from one point to the next. That should be discussed. There is no baseline data about how discharges from one facility will compound the effect of discharges from the next one. If platforms are in close proximity, will that effectively result in one really large mixing zone, or will it not have any effect at all?
- The material that is leaving the platform, is it mud or cuttings, or is that produced water? ***DEC response:*** *the definition of produced water is that it comes up with oil or gas (out of the formation) and then it is separated. Most produced water in Cook Inlet is sent to Trading Bay and then discharged. There is a small percentage of platforms that have the authority to discharge produced water, but the vast majority goes to shore-based facilities and is then discharged in one spot. Also the subject of many studies has been to find out the impact of discharging the majority of produced water in one area.*
- Question: Who bears the cost for modeling the mixing zones? ***DEC response:*** *the burden is on the applicant to provide the application and all applicable information.*

- Question: Is it right to think of the mixing zone as a site specific variance within the permit? ***DEC responsed*** *that in Cook Inlet, yes; but across the board, no. This is different than other general permits because there are multiple long-standing facilities with available information. In other general permits there might not be so much available information, so it is easier to cover all facilities at once with the same standards. As time goes on, the standards for each facility can change as more information becomes known.* ***EPA:*** *the mixing zones are not really variances, they are part of the permit.*
- Making information available to the public
    - Would like to see a mapping tool that people could look to see where the mixing zones are, whether they are overlapping, what resources are affected, who is using them, and other information on those operators.
    - It is a good point that information has not been available online for people to access. Would like to add information to the Alaska Ocean Observing System (AOOS) Cook Inlet data portal. This group should be thinking about what data you would like to see.
    - What kind of data would this be? How broken down would it be for the public?
    - Right now, it represents an average for a month in some cases, but that is the best that is currently available. It would be nice to make it map-based. Really it is based on data that is reported on discharge monitoring reports.
    - How would the public understand what they are looking at?
    - That is a challenge across the board. There is a danger in making it too simplified or too detailed. The effort would be on making it more accessible, accurate, and not misleading.

4.2. Implementation in phases - incremental improvements in reducing discharges

Issues/Concerns and Solutions

- It is great that DEC is looking at priority issues of water quality standards, but there is concern about when the State of Washington said that fish consumption was not the cause of deteriorating health, and concern that Alaska will go down that same path without taking tribal reviews seriously. There should be more realistic fish consumption study methods and the state should retain strong standards for health risks. As fish consumption rates are revised to more accurately capture realistic fish consumption, I hope they don't adjust acceptable cancer rates in the opposite direction. Whatever progress is made, it should not get negated by other political processes that come into play.

  Participant Proposed Solution: Better fish consumption study methods and retention of strong standards for health risks.
- Clarification on what is meant by incremental improvement. ***DEC response:*** *the permit is intended to capture 5 years at a time, in order to do things better with each reissuance. The question is: what should be part of the discussion as DEC considers reissuance of the permit. It is a broad subject and is meant to be. The hope is to trigger ideas.*
- It sounds like DEC is going in the right direction, but some facilities have grandfathered mixing zones. The commenter would like fewer of those in the future. ***DEC response:*** *mixing zones are not just for old facilities*.
- It appears that by doing both general and individual permits, a lot more resources are being used than if there were only the individual permits. If every individual facility gets an exception to the general permit, then why don't they just do 13 individual permits? It seems like you are doing it twice: you write the General Permit, then you write 13 exceptions to the permit, it seems like it

would be more efficient to just do 13 individual permits. ***DEC response:*** *the mixing zones are not really exceptions, they are part of the General Permit. In theory the General Permit takes one big chunk of time instead of lots of smaller chunks of time to do multiple individual permits. A GP only requires 1 public comment period. The administration is more efficient for a GP with comparable environmental protection*.

Solution: It does not have to be an all-or-nothing scenario. DEC may be able to permit similar facilities together under a single permit more often, and issue individual permits for dissimilar facilities.

- Communication efforts: It is a little alarming that in 2004 the EPA spoke with so many more tribes than then it did in 2013, it seems like a big drop off.

  Participant Proposed Solution: Perhaps DEC could reach out to the tribes and find out why they did not give input in 2013? Make more of an effort to improve outreach and consultation, so the outcome is strong participation, as in 2004, as opposed to less participation in more recent years.

  - ***EPA responded*** *that some of the 2004 interviews were done as part of the NEPA process at the time, and were done with a contractor, as opposed to simply asking for input on the permit. In 2004, tribes were sought out for a specific process.*
  - Comment: The 2004 effort left a bad taste in some people's mouths, so to speak. As a result, approaching the 2013 meetings was tough because of how things were done before. In 2013, when EPA did more Government-to-Government, and DEC was more involved, it made a difference. The 2013 meetings were better. In 2004 everybody was just smile, nod, and check a box. In 2013, people seemed friendly, genuine, and it was better. DEC asked if there were lingering concerns. A stakeholder responded that in 2004 he went to several meetings and the same things were brought up over and over, and it appeared that the concerns of the meeting participants were not being considered, and were not always in the minutes. In 2013 the process was improved.
  - Comment: It is more complicated than in 2004 we had big numbers (of people that participated in the tribal consultation) and in 2013 we had little numbers (fewer peopled/tribes involved), it seems like there was a difference in the quality of listening.

  Participant Proposed Solution: Stakeholders appreciated the fact that in 2013 people were friendly and seemed genuine. Those relationships need to be built on. Meet people face to face and show that things are changing regarding their concerns and that the people are being listened to.

- How many of those platforms are actually producing. There are 14 or 15 platforms out there, but how many of those are actually producing. When you are looking at all those rigs out there, how many of them are actually going to living entities in the next 5 years? The public does not have information about what is happening on the ground. How many platforms are there, what are they producing, how many are producing, and how much are they producing? The public needs to know these things, and the trajectory of what is expected in the next five years in order to know what they want to comment on.
- Why can't the first well drilled be mandated to be a reinjection well? There are places where the first well you drill has to be an injection well. If the state is going to offer a drilling incentive, then they should also offer an incentive for drilling injection wells. Then there would not have to be a general permit at all.

- Is it true that under the effluent guidelines, new sources are not exempt? ***EPA response:*** *not sure, but they think the new facilities are also exempt.* ***DEC's response:*** *The ELG's are the same for new sources as old facilities.*
- In the long lists of studies available, how many of the studies are done by industry, and would it be possible for industry to put money into a fund to do follow-up studies, since it benefits industry too? Response was that most studies [in the Technical References Summary Table in the workshop binder] are not funded by industry. Most are done by MMS, NOAA, BOEM, University of Alaska, private consultants, or other organizations. There are times and particular reasons for industry-funded studies.

  Participant Proposed Solution: Would like more follow-up studies, and more integration of available data from many sources to inform larger findings.
- *Effluent Limitation Guidelines*
    - When we do bring up (revising) the coastal subcategory and (related) economics; we are always told that (the permit) is not the (appropriate) mechanism to make this change. So stakeholders would like some discussion or direction on where/how comment on the effluent limitation guidelines (ELGs). ***EPA response:*** *the two-year plan is the appropriate mechanism for making change in ELGs. They are studying the changing characteristics and economic climate of Cook Inlet. The draft of the 2014 plan will be out soon, and it would be beneficial for stakeholders to resubmit any comments that were submitted on the 2012 Plan. The EPA Office of Technology would have the projected date for that coming out.*
    - Concern about what needs to happen to have the ELGs revised to remove the Cook Inlet exceptions. What is the balance between economic considerations and reevaluation of ELGs?
    - There are differences between how existing facilities and new facilities are treated, to a certain extent. New facilities are better situated to use most current approaches. Whereas existing facilities are not easily adaptable.

  Participant Proposed Solution: EPA does a good job on many things. An example is the handling cadmium and mercury in barite from Canadian mines. EPA issued guidance in late 1970s for cadmium and mercury, which industry accepted, and the problem went away. Main point: changes can happen but they might be very small impacts and small changes. Concern: told by EPA on last NPDES permit to use a model that was inappropriate. DEC should require modeling that has more applicable results, and allow more flexibility in the methodology that is used in capturing impacts.
    - We need to consider that regulations that are applied are different for exploration vs. production, and also *old* production vs. *new* production. Many of the new platforms have ways to deal with muds and cuttings apart from discharge. Old production facilities simply cannot retrofit platforms for whatever reason and are getting to end of the facility lifespan. Lots of things to consider that play into decision on how far you can go.
- If DEC really wants to work toward minimizing the allowable discharges, DEC needs to have a plan for that, and follow it.
- How does DEC take new information and the 5-year permit timeframe into account? ***DEC response:*** *would incorporate new information as part of the reissuance process.*
- Is there a long term goal of reducing discharge or concentrations of pollutants in discharges, and what kinds of timeframes are DEC considering? Technology will not lead if there is no reason to lead. ***DEC response:*** *the title of the permitting programs (both NPDES and APDES) includes the elimination of pollutant discharges, and they have been working to that end since the 1980s. The assumption is*

that the permittee will work toward eliminating discharge. There are no specific goals to get to a certain point by a certain time. It is a balancing act with regulations. It is possible to dictate that regulations will help meet goals, but technological innovation is needed to meet them. There is a role for regulation, but the challenge is finding the balance. DEC is looking for suggestions on timeframes and goals that would be achievable.

Participant Proposed Solution: Look at BMPs in the context of Cook Inlet for suggestions on what should be considered and how. It is more useful to write the conditions in ways that are more goal-oriented instead of directive toward certain methods. Keep it performance-based and allow the permitees to challenge themselves to innovate to meet goals. Need to use performance based standards, not prescriptive standards.

4.3. From your understanding of local conditions in the proposed permit area, what are the key factors that need to be considered?

For this break-out topic, suggestions and recommendations were provided by participants and compiled into categories. This is a running list that DEC will refer to during the development of the permit.

Considerations

- Physical
  - Currents and circulation
  - Suspended sediments
  - Dissolved Oxygen is unimportant; it is all saturated
  - Salinity
  - Ice
  - There could be more focus on where specific discharges are occurring.
  - Seasonal differences: There is data on seasonal variations, but it is hard to put it all together into one database. Information dates back to the 1970's, and there is alot of it with many parameters. As a result, there has been a large effort to track down that information, but much of it is not available. Some data were on tapes, and the tapes were destroyed. There is an ongoing effort to digitize as much as possible. There is a lot that is not available, or not usable. New technologies can be incorporated into the database. Stakeholders are aware of the data that does exist, and also aware of the data gaps. There is not a comprehensive list of the data gaps, and we are only aware of the ones people are trying to fill. This is good opportunity to start creating a database. URS observes that filling the data gaps is beyond the scope of one agency, and needs to be done with coordination amongst many agencies.
  - Climate change impacts, and how water input changes may impact Cook Inlet, or other climate change impacts.
  - Other discharges, non-oil and gas related discharges (locations and information on discharge)
  - Circulation model figure (Okkenen) is inconsistent with other data that is out there. That figure was put out by Okkenen as an effort to simplify incredibly detailed models with little data. They found huge difference in currents seasonally. There is a bit of misinformation from the Burbank paper. The figure was an effort to step back and simplify from a bigger picture.
  - In the Produced Water Study, here was sampling in mixing zones, but no way to verify that discharges were actually occurring during sampling. Require some sort of produced discharge study to make sure that discharges are taking place when sampling occurs, possibly tracer studies. The concern is that what the sampling is collecting is what is meant to be sampled. (Commenter) would like confirmation that discharge is occurring when sampling is conducted.

- Biological
    - Benthic work: By Ninilchik there is a spot that is the most benthically productive in Cook Inlet, and it has the highest diversity. There are differences in water and habitat. Differences in benthic environments and oceanography need to be considered.
    - Sea otter expansion (likely due to population increases), and where they are covered by MMPA.
    - There is a collaborative proposal for agencies and universities to look at bivalve populations in Cook Inlet
- Social
    - Increasing vessel traffic patterns and risk assessment. There is also risk assessment coming out with increased traffic patterns.
    - Ballast and water supply. It can be clean as far as contaminants, but not clean with regard to non-indigenous species.
    - Would like to see near shore forage fish studies where main ballast discharges occur.

4.4. Any concerns that were not discussed, or topics that expected to be discussed?

After the structured discussions on the pre-identified topics, the floor was opened up to collect any comments that participants would like to share but were not related to topics already discussed. A summary of those comments is below:

- Hoping to hear more about how things went with 2007 general permit. To what extent can DEC rely on carrying that permit forward consistently, or account for lessons learned? ***EPA responded*** *that there are differences between production and exploration permits. The starting point for DEC will be the previous permit, and DEC will determine what needs to be revised to incorporate changing requirements, conditions, standards, etc.* ***DEC responded*** *that this is the purpose of the workshop—what can/should DEC change according to stakeholders?*
- Should touch more on where DEC is going to come in on compliance of monitoring reports and inspection schedules. Stakeholders would like to see better background on where the discharges are happening, what's out there, and overall summary. ***DEC responded*** *that they have places in presentations where they can add more information about that.*
- Maps are stagnant. Stakeholders would like GIS data to use in their own GIS analyses. ***DEC responded*** *that some layers are downloadable, and DEC is trying to get a more comprehensive database to make available to the public.*
- More information on monitoring might also be made available.
- Workshop didn't touch on topics that affect certain species (like seismic impacts on whales). ***DEC responded*** *that this is not considered discharge and not within the scope of the permit.* ***URS suggested*** *that DEC should clarify what is in scope, and also how DEC takes into account cumulative effects. DEC stated that a diagram of what is or is not in scope would be useful.*
- The list of references is great. There are some old, and some missing, but it is more comprehensive than anything to date.
- **Question:** The tide rips through the upper part of Cook Inlet. How does that affect sampling? Is there a standard set of sampling conditions to compensate for that? It seems like it would be necessary to have some standards to get reliable data. The response was that some standard

equipment is hard to use in Cook Inlet due to strong tides and scour. In upper Cook Inlet there is not much sediment on the bottom in waters greater than 10 meters deep. Sediments are present, but they are in the water column, not on the bottom, so the water column sampled instead.

Participant Proposed Solution: Adapting to local conditions when creating sampling plans and collecting data.

- There was a question about the presence of a colloidal fraction of materials in Cook Inlet water. The response was that the colloidal fraction is not measured specifically. **DEC Response:** *To date, the dissolved and particulate fractions are quantified, and the colloids end up in the dissolved and/or particulate fractions.*
- **Question:** Has there been any sampling along the east side of the beach (East Beach) where there was a die-off in razor clam populations? ***DEC Response:*** *Yes, and contaminant concentrations were found to be low.*
- Halibut biomass is of concern in the Cook Inlet, and the fishing regulations are changing as a result. There are concerns about halibut with soft meat. ***DEC Response:*** *there was a study with resident fish; the report came out about a month ago. Contaminants were not detected. About 20 different species were collected, and most of the data for contaminants were non-detects.*

  Participant Proposed Solutions: Other organizations could provide additional information. Better integration of studies across organizations and industries, and better experimental design. It is to the benefit of everyone to do more research. When there is a problem, it is easy to point the finger at the discharges even when there is no evidence that discharges are to blame. Research should be coordinated across organizations and industries to test hypotheses and answer specific questions.
- Local knowledge is particularly useful for detecting changing conditions. And those observations become hypotheses for testing. Start with the observations of change, and then design research to address possible causes of change.
- Almost every parameter of concern in the permit occurs naturally, so it is hard to detect concentration changes in the Inlet. Part of the ambient modeling should be focused on determining the natural baseline levels. For example, discharges deposit contaminants, and ambient levels change over time. As activities continue in Cook Inlet, concentrations of contaminants could accumulate. Such research is expensive, so work with other agencies would be worthwhile.
- Some things are simply out of our control, like the smog from China.
- When rivers freeze, there is no flow of fresh water, and how does that affect mixing zones? Reiterating the concern of seasonal variability in hydrographic processes, and what that might mean to mixing zones. Also, is there an impact with cooler temperatures of water in the winter? It is worth doing more research.
- Cook Inlet has really been a showpiece for oil tax credits; it could also be a show piece for responsible development. It is a real opportunity for the state to demonstrate responsible development and permitting, and be an example for future development in other parts of the state.
- There are more and more permits and lease sales in lower Cook Inlet, and there are also more fish down here at the lower end of Cook Inlet. Are they going to be exposed to more predators if they are moved out of here? Maybe DEC should get more information from the fisherman and locals about the location of nurseries when doing exploratory drilling so the nurseries are disturbed less.

- Who has jurisdiction over permitting in the lower Cook Inlet? ***EPA*** *explained the difference between state and Federal waters in the lower Inlet. EPA has jurisdiction for discharge permits in Federal waters. Currently there is no exploration occurring in Federal waters, so any production and development would be far in the future.*
- Is it possible to get an electronic copy of the resource list? How many of the resources do you have electronically that you can distribute? ***DEC*** *offered to look into this.*

5. Workshop Evaluations

5.1. Anchorage Evaluations

Evaluations Scores ranged as follows: Excellent (5), Good (4), Average (3), Fair (2), Poor (1)

General Evaluation

	Evaluation Scores						AVG.
Overall Evaluation	4	4	4	4	4	4	**4.00**
Facilitation	4	5	5	5	4	4	**4.50**
Presentation Effectiveness	5	4	5	3	4	4	**4.17**
Workshop Materials	5	4	4	4	4	3.5	**4.08**
Facilities/Environment	4	5	4	5	4	3	**4.17**
Opportunity to Share Information	5	4	5	5	5	4	**4.67**
					AVERAGE GENERAL EVALUATION		**4.26**

Workshop Presentation Content

	Evaluation Scores						AVG.
Identification of objectives and expectations	4	5	4	5	4	3	**4.17**
Sequence of presentations	4	5	4	5	4	4	**4.33**
Quality of slides	4	5	4	5	4	3	**4.17**
Quality of binder	4	5	4	5	4	4	**4.33**
Time allocated to cover material	4	4	3	4	4	4	**3.83**
					AVERAGE CONTENT EVALUATION		**4.17**

Workshop Break-out Sessions

	Evaluation Scores						AVG.
Relevance of topics	4	4	5	5	4	4	**4.33**
Presentation of objectives	4	5	4	5	4	3	**4.17**
Facilitation	4	5	5	5	4	4	**4.50**
Opportunity for Input	4	5	5	5	4	5	**4.67**
					AVERAGE BREAK-OUT EVALUATION		**4.42**

What was the most beneficial part of the workshop for you?

1) Willingness of DEC to pull the various stakeholders together for a thoughtful conversation about the upcoming GP.

2) Hearing different perspectives.

3) Interaction with different groups.

4) Presentations and explanations.

5) Coming back up to speed.

6) The overview in the morning was good. The open forum discussion in the afternoon was also educational.

What was the least beneficial part of the workshop for you?

1) It would have been helpful to have more information on the format, key issues, and areas where we would be asked for feedback in advance.

2) Would be useful to have info (maps) on location of current discharges and summaries of past permit results.

Were the workshop location, facilities, and equipment adequate for the workshop activity?

1) yes x 4

2) no x 2 ; would like a better place without security, would prefer to have windows and no basement

What specific improvements would you recommend for the next workshop (Presentation)?

1) Preliminary draft permit language to discuss.

2) Is there any way to cover material faster?

3) Permit conditions proposed.

4) There were a few slides that were so general; a bit more detail and explanation of these could be helpful.

What specific improvements would you recommend for the next workshop (Break-out Sessions)?

1) It may be good to have industry reps discuss general operations pertaining to these discharges.

2) It would be easier to engage if I had known how to prep.

Additional comments or concerns?

1) Thank you.

2) Need to understand the existing/older database.

3) Thank you for having this pre-permit development workshop. I found it informative and useful.

5.2. Homer Evaluations

Evaluations Scores ranged as follows: Excellent (5), Good (4), Average (3), Fair (2), Poor (1)

General Evaluation

	Evaluation Scores									AVG.
Overall Evaluation	5	4	4	4	4	4	5	4	4	**4.22**
Facilitation	5	4	4	5	4	4	5	4	4	**4.33**
Presentation Effectiveness	4	4	4	4	4	4	5	4	3	**4.00**
Workshop Materials	5	4	4	4	4	4	5	4	4	**4.22**
Facilities/Environment	4	4	4	4	4	4	5	4	4	**4.11**
Opportunity to Share Information	5	5	4	5	5	4	5	4	3	**4.44**
									AVERAGE GENERAL EVALUATION	**4.22**

Workshop Presentation Content

	Evaluation Scores								AVG.
Identification of objectives and expectations	5	3	4	5	4	4	4	4	**4.13**
Sequence of presentations	5	4	4	5	4	4	4	4	**4.25**
Quality of slides	4	3	4	4	4	1	3	4	**3.38**
Quality of binder	5	3	4	4	4	4	4	4	**4.00**
Time allocated to cover material	5	3	4	4	4	4	4	4	**4.00**
								AVERAGE CONTENT EVALUATION	**3.95**

Workshop Break-out Sessions

	Evaluation Scores								AVG.
Relevance of topics	5	3	4	4	4	5	4	3	**4.00**
Presentation of objectives	5	2.5	4	4	4	4	4	3	**3.81**
Facilitation	5	4	4	4	4	5	4	4	**4.25**
Opportunity for Input	5	5	4	5	5	5	4	4	**4.63**

What was the most beneficial part of the workshop for you?

1) Learning the general permit timeline and process behind drafting and issuing a general permit.

2) Having printed presentation slides and references.
3) Non-judgmental atmosphere and open dialog.
4) Info on permit development and mixing zones.
5) Info on mixing zones.
6) Gerry Brown's presentation.
7) Presentations and break-out sessions were equally good and important. Presentations for background info and sharing information and thoughts.

What was the least beneficial part of the workshop for you?

1) The breakout session.
2) A little lost in DEC quality measurements and mixing zones. Go over the process better for how a company gets a mixing zone or individual discharge permit.
3) Not hearing more from industry who were present.
4) Listening to myself talk

Were the workshop location, facilities, and equipment adequate for the workshop activity?

1) yes (x 9)
2) no (x 0)

What specific improvements would you recommend for the next workshop (Presentation)?

1) Needs more attendance of professional staff -- In this session there were as many presenters as attendees.
2) More pictures in slides and more detail on collecting data used to ensure water quality and permit guidelines are being met.
3) Bigger screen for Power Points
4) Maybe slightly less technical info in regards to effluent limits and mixing zones. We don't need to know formulas.

What specific improvements would you recommend for the next workshop (Break-out Sessions)?

1) A bit of training/information on the process to benefit those who do not have the background.
2) Think about cost versus benefit of no discharge
3) People were open to discussion and not being cut off. So glad this was allowed.
4) Better attendance.

Additional comments or concerns?

1) This is geared more towards professional staff.
2) Thank you (x2)